February 17, 2016 EPA-CPG Mapping Meeting
Action Item List

1. Segmentation of the River By Geomorphic Characteristics and Contaminant Stats
    a. Consider joining groups using regression analyses on the mean concentrations (ANOVA model with 0, 1 variable for groups)
        i. Look for variables with continuous coverage, e.g., shear-stress, bathymetry
    b. Evaluate the group variances on a residual basis using above mean regression analysis

2. Conditional Simulation Refinements
    a. Adjust centerline for river straightening
        i. Check on level of effort first, as this adjustment is lower priority
        ii. Consider defining along the thalweg
    b. Continue normal scores evaluation
        i. First try ln(residuals) after doing mean regression analysis in (1a) above, then switch to normal scores if still needed

3. Adjustments to the Variograms
    a. Revisit RM10.9 variogram
        i. on a residual basis
        ii. on a normal scores basis
    b. Look for options for developing lower river variogram (below RM 8)
        i. Potentially use the 1995 data on a residuals basis
    c. Look at options for developing a cross-channel variogram (anisotropy ratio)
    d. Evaluate nugget effect
        i. Review JK's analysis of nugget using RM10.9 data
            1. JK will send data and matlab code
        ii. Develop nugget sensitivities
            1. Could simply add X% random noise if easier than redoing variogram

4. Mapping Subsurface Concentrations
    a. Evaluate options for regression model for subsurface interpolation
    b. Consider developing variogram in the subsurface
    c. Calculate correlation between surface and subsurface samples – at a group level
    d. (Defer evaluation of 3D kriging options for now)
    e. Evaluate the suitability of channel bathymetric groupings for subsurface interpolation

5. Remedial Benefit Evaluation / CFT Model ICs
    a. Characterize concentration variability across simulations on the scale of CFT model grid cells
    b. Lay out options for developing a static footprint and assessing remedial benefit across simulations (assumes no new data will become available for design)
        i. Average of simulations
        ii. % exceedance of an RAL
    c. Lay out options for evaluating footprints that vary by simulation (assumes higher density

data will become available for design)

i. Incorporate a synthetic sampling approach

d. Consider CFT model ICs that are consistent with above remedial footprint options

6. QC Diagnostics
    a. Add crossplots of simulation results and observed data at sample locations, to check that simulations are properly conditioned